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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538,954	03/31/2000	Carl M. Ellison	042390.P8107	9452

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EXAMINER

NORRIS, TREMAYNE M

ART UNIT	PAPER NUMBER
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2137

13

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/538,954

Applicant(s)

ELLISON ET AL.

Examiner

Tremayne M. Norris

Art Unit

2137

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5-12. 6) ☐ Other:

DETAILED ACTION

Oath/Declaration

1. It does not include the signatures of all applicants. Appropriate correction is required.

Specification

2. The disclosure is objected to because of the following informalities: On page 15 line 14, the word 'decoder' is misspelled. On page 16 line 6 it states that "The isolated bus cycle generator 220 exchanges operand 224 with and receives access information..."; it is not understood what the bus generator is exchanging the operand with.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1,3,16,18,31,33 rejected under 35 U.S.C. 102(e) as being anticipated by Barnett (US pat 6,292,874).

Regarding claim 1, Barnett teaches an apparatus comprising:

a configuration storage containing configuration parameters to configure a processor in one of a normal execution mode and an isolated execution mode (col.2 lines 58-66; col.3 lines 54-59;

an access generator circuit coupled to the configuration storage to generate an isolated access signal using at least one of the configuration parameters and access information in a transaction, the isolated access signal being asserted when the processor is configured in the isolated execution mode (col.3 lines 25-33; col.4 lines 6-53; col.5 lines 20-28); and

a bus cycle decoder coupled to the access generator circuit to generate an isolated bus cycle corresponding to a destination in the transaction using the asserted isolated access signal and the access information (col.4 lines 6-53; col.5 lines 20-28; col.5 line 61 thru col.6 line 6; col.6 lines 21-35).

Regarding claim 3, Barnett teaches the apparatus of claim 1 wherein the destination in the transaction is one of an isolated memory area in a memory external to the processor, an isolated register, and an isolated state (col.5 line 56 thru col.6 line6; col.6 lines 37-63).

Claims 16 and 18 are method claims that are substantially equivalent to apparatus claims 1 and 3 respectively, therefore claims 16 and 18 are rejected because of similar rationale.

Claims 31 and 33 are system claims that are substantially equivalent to apparatus claims 1 and 3 respectively, therefore claims 31 and 33 are rejected because of similar rationale.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett (US pat 6,292,874), and further in view of Grimmer et al (US pat 5,737,760). McFarland et al (US pat 6,499,123).

Regarding claim 2, Barnett teaches the apparatus of claim 1 but does not teach the configuration parameters include an isolated setting and an execution mode word. Grimmer et al teach that the configuration parameters include an isolated setting and an execution mode word (col.2 lines 28-37). It would have been obvious to one of ordinary skill in the art to combine Barnett's memory management apparatus with Grimmer et al's teaching of an execution mode word in order for the system to know which security mode the microcontroller is in.

7. Claims 4-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett (US pat 6,292,874), and further in view of Neufeld (US pat 5,668,971).

Regarding claim 4, Barnett teaches the apparatus of claim 3, but does not teach that the access information comprises a physical address and an access type. Neufeld teaches that the access information comprises a physical address and an access type (col.4 lines 9-15; col.4 lines 36-50; col.16 lines 5-20). It would have been obvious to one of ordinary skill in the art to combine Barnett's memory management method with Neufeld's teachings of access information in order for the system to generate an appropriate access signal and to determine if a memory read or write operation to a protected memory address is in process (Neufeld col.17 lines 59-67).

Regarding claim 5, Barnett and Neufeld teach the apparatus of claim 4, in addition Barnett teaches the configuration storage comprises: a register to contain the isolated setting for defining the isolated memory area (col.5 lines 56-60).

Regarding claim 6, Barnett and Neufeld teach the apparatus of claim 5, in addition Barnett teaches the isolated setting is one of a mask value, a base value, and a length value (col.47-62).

8. Claims 7-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett and Neufeld, and further in view of Grimmer et al.

Regarding claim 7, Barnett and Neufeld teach the apparatus of claim 6 but does not teach the configuration storage further comprises: a processor control register to contain the execution mode word, the execution mode word being asserted when the processor is configured in the isolated execution mode. Grimmer et al teach the configuration storage further comprises: a processor control register to contain the execution mode word, the execution mode word being asserted when the processor is configured in the isolated execution mode (col.2 lines 28-37). It would have been obvious to one of ordinary skill in the art to combine Barnett and Neufeld's memory management apparatus with Grimmer et al's teaching of an execution mode word in order for the system to know which security mode the microcontroller is in.

Regarding claim 8, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 7, in addition Barnett teaches the access generator circuit comprises: an address detector to detect if the physical address is within the isolated memory area defined by the isolated setting (col.5 lines 9-36).

Regarding claim 9, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 8, in addition Neufeld teaches that the isolated bus cycle is one of a data access cycle, a control access cycle, and a logical processor access cycle (col.16 lines 5-20).

Regarding claim 10, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 9, in addition Neufeld teaches the data access cycle is generated when the access type is a memory reference to the isolated memory area (col.4 lines 9-15; col.4 line 67 thru col.5 line 2; col.15 line 66 thru col.16 line 20).

Regarding claim 11, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 9, in addition Barnett teaches the isolated register is in a chipset external to the processor (Figs.1, 2).

Regarding claim 12, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 11, in addition Neufeld teaches the control access cycle is generated when the

access type is an input/output reference to the isolated register (col.11 lines 8-11; col.16 lines 5-20).

Regarding claim 13, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 9, in addition Neufeld teaches the logical processor access cycle is generated when the access type is one of a logical processor entry to and a logical processor withdrawal from the isolated state (col.4 lines 9-15; col.4 line 67 thru col.5 line 2; col.5 lines 39-42).

Regarding claim 14, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 13, but do not teach that the logical processor entry to the isolated state updates a logical processor counter in the chipset in a first direction. McFarland et al teach the logical processor entry to the isolated state updates a logical processor counter in the chipset in a first direction (col.7 lines 17-32; col.73 lines 33-46). It would have been obvious to one of ordinary skill in the art to combine Barnett, Grimmer et al, and Neufeld's teaching of a logical processor access cycle with McFarland's teaching of a counter in order to compare the outstanding iterations to the most recently available remaining count indication (McFarland col.73 lines 33-46).

Regarding claim 15, Barnett, Grimmer et al, and Neufeld teach the apparatus of claim 13, but do not teach that the logical processor withdrawal from the isolated state updates a logical processor counter in the chipset in a second direction. McFarland et

al teaches that the logical processor withdrawal from the isolated state updates a logical processor counter in the chipset in a second direction (col.7 lines 17-32; col.73 lines 33-46). It would have been obvious to one of ordinary skill in the art to combine Barnett, Grimmer et al, and Neufeld's teaching of a logical processor access cycle with McFarland's teaching of a counter in order to compare the outstanding iterations to the most recently available remaining count indication (McFarland col.73 lines 33-46).

Claims 17,19-30 are method claims that are substantially equivalent to apparatus claims 2,4-15, therefore claims 17,19-30 are rejected because of similar rationale.

Claims 32,34-45 are system claims that are substantially equivalent to apparatus claims 2,4-15, therefore claims 32,34-45 are rejected because of similar rationale.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tremayne M. Norris whose telephone number is (703) 305-8045. The examiner can normally be reached on M-F 7:30AM-5:00PM alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (703) 305-4789. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Tremayne Norris

January 12, 2004

Matthew B. Smithers
MATTHEW SMITHERS
PRIMARY EXAMINER
Art Unit 2132